

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Lofts Pedigreed Seed, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *seventeen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS DETERMINED BY THE OWNER OF THE RIGHTS. (34 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

PERENNIAL RYEGRASS

'Yorktown'

In Testimony Whereof, I have hereunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed
at the City of Washington
this 14th day of May in
the year of our Lord one thousand nine
hundred and seventy-six

Attest:

J. J. Rollin

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Earl L. Butz
Secretary of Agriculture



INSTRUCTIONS

GENERAL: Send an original copy of the application, exhibits and \$50.00 fee to U.S. Dept. of Agriculture, Consumer and Marketing Service, Grain Division, Hyattsville, Maryland 20782. Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

5 Insert the date the applicant determined that he had a new variety.

12a First, give the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method. Second, give the details of subsequent stages of selection and multiplication. Third, indicate the type and frequency of variants during reproduction and multiplication and state how these variants may be identified. Fourth, provide evidence on stability.

12b First, give any special characteristics of the seed and of the plant as it passes through the seedling stage, flowering stage and the fruiting stage. Second, describe the mature plant and compare it with a similar commercial variety grown under the same conditions, and indicate the differences.

12c A supplemental form will be furnished by the PVPO to describe in detail a variety for each kind of seed.

12d Provide complete data indicative of novelty. Seed and plant specimens may be submitted and seeds submitted may be sterile. Where possible, include photographs of plant comparisons, chemical tests, etc.

12e Indicate whether applicant is the actual breeder, the employer of the breeder, the owner through purchase or inheritance, etc.

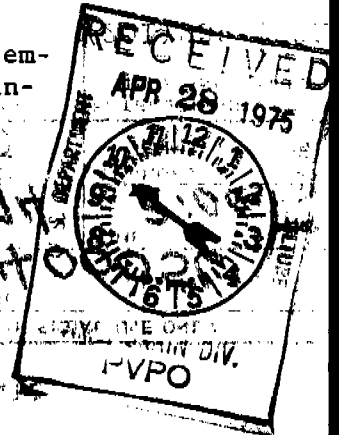


EXHIBIT A

Origin and Breeding History of the Variety Yorktown.

1. Yorktown perennial ryegrass is a five-clone synthetic variety with the following origin and breeding history.

No. of clones	Germplasm source of parental clones	Progeny Type	Remarks
2	NJE K-79 (Maternal parent)	Polycross	NJE E-79 contains germplasm of 80 turf-type ryegrass clones previously selected at Rutgers University.
1	L4V (Maternal parent)	polycross	L4V is one of the parental clones of Manhattan ryegrass
1	L4H x NJE K-79	single cross	L4H was selected from old turf in Baltimore, Maryland.
1	Pennfine x Central Park, New York City selection	single cross	

The five parental clones were chosen on the basis of their performance in clonal evaluation and polycross performance trials.

2. Clonal propagules of the five parental clones were established in a randomized, replicated isolated crossing block for the production of Syn I seed. Breeders seed was produced in an isolated spaced-plant nursery from the progeny of Syn I seed. Foundation increase fields were established from Breeders seed. Certified production fields must be established from Breeders or Foundation seed.
3. No objectionable off-type plants or variants have been observed in the reproduction and multiplication of this variety.
4. Syn I and Syn II seed has produced turf of comparable quality and acceptable uniformity.

7400056

EXHIBIT BBotanical Description of the Variety

'Yorktown' perennial ryegrass is a dark green, fine-textured turf-type variety.² Ratings at New Brunswick, New Jersey show Yorktown to be somewhat darker green than either Manhattan or Pennfine at certain times of the year.² At New Brunswick, Yorktown has produced an excellent turf, being especially attractive during the fall, winter and spring seasons.¹ It has shown good resistance to a late fall and winter brown blight disease caused by Helminthosporium siccans Drechsler.² It produces a turf comparable in density and texture to Manhattan and Pennfine.² Resistance to Rhizoctonia brown patch is comparable to that exhibited by Manhattan but inferior to that observed in Citation or Pennfine.² Yorktown is intermediate in maturity between Pennfine and Manhattan.³ It produces no fluorescent seedlings. Yorktown has maintained a more leafy turf during late May and early June than varieties such as Pennfine and Citation. Mowing qualities of Yorktown appear to be comparable to that observed in Manhattan and Pennfine. Spaced-plant nursery planting at Adelphia, New Jersey indicate that Yorktown has good winterhardiness, being comparable to Manhattan in this respect and significantly more winter hardy than Pennfine.

1 See attached Table 1.

2 See attached Table 2.

3 See attached Table 3.

EXHIBIT DData Indicative of Novelty

Novelty is based on the unique combination of the following characteristics:

'Yorktown' perennial ryegrass most closely resembles 'Manhattan' except it has shown (1) a somewhat darker green color (2) earlier maturity and (3) a greater resistance to Helminthosporium siccans.

EXHIBIT E

C. Reed Funk directed the breeding of 'Yorktown' perennial ryegrass. He is an employee of the Soils and Crops Department of the New Jersey Agricultural Experiment Station.

Table 1. Monthly Turf Quality Ratings of Perennial Ryegrass Varieties at New Brunswick, New Jersey

Variety	Turf quality ratings 9 = best quality											
	Sept. Oct.		Nov.		Mar.		Apr.		May		June	
	1972	Oct. 16 1972	7.5	7.8	8.5	8.0	8.0	8.0	8.0	5.5	6.5	7.0
1. Yorktown	7.3	7.5	7.8	8.5	8.0	8.0	8.0	8.0	8.0	5.5	6.5	7.0
2. Citation	7.1	7.5	4.0	6.3	7.0	5.8	6.3	7.7	8.0	8.7	8.0	7.1
3. Manhattan	6.8	6.8	6.6	7.6	7.5	7.2	4.5	5.5	6.0	6.5	7.4	6.8
4. Pennfine	6.7	6.6	4.6	5.5	4.5	5.0	5.7	6.7	7.0	7.2	7.5	6.5
5. NK-200	5.0	5.5	5.8	6.3	6.7	6.2	5.0	4.0	4.3	3.0	4.3	5.0
6. Pelo	4.2	4.2	5.2	5.3	5.3	4.8	3.0	3.3	3.7	3.0	4.7	4.4
7. NK-100	3.9	4.0	3.7	4.7	4.7	3.8	2.3	3.7	4.0	3.7	4.7	4.1
8. Barenza	3.4	4.0	4.5	4.0	4.0	3.5	2.3	2.3	3.0	4.0	4.0	3.6
9. Oregon Common	3.1	3.8	2.8	3.2	3.0	1.9	1.4	1.4	2.0	2.2	3.2	2.7
LSD at 5%	0.6	0.6	0.7	0.9	0.7	0.6	1.2	0.8	0.8	1.2	0.8	0.8

Test seeded August 1972
Mowed at 3/4 inch
Moderate to high fertility maintained during all seasons.

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Table 2. Performance of Perennial Ryegrass Varieties at New Brunswick, N. J.
Test seeded August 1972.

Variety	Turf quality 9=best average	Color rating 9 = darkest			Brown blight percent brown	Brown patch 9 = most disease June '73	Tillers per 100 sq. cm. Nov. '73	Leaf width mm Nov. '73
		Oct. 1972	Aug. 1973	Nov. 1973				
1. Yorktown	7.4	7.5	7.0	8.0	7.5	9	308	1.8
2. Citation	7.1	8.0	8.0	8.0	8.0	74	321	2.0
3. Manhattan	6.8	6.2	7.0	7.0	6.7	15	288	1.9
4. Pennfine	6.5	6.6	5.5	6.5	6.2	66	322	1.8
5. NK-200	5.0	5.7	5.3	6.3	5.8	18	202	2.3
6. Pelo	4.4	3.7	3.7	5.3	4.2	9	251	2.2
7. NK-100	4.1	4.3	4.3	5.0	4.5	30	220	2.3
8. Barenza	3.6	4.0	3.7	4.7	4.1	13	191	2.4
9. Oregon Common	2.7	3.8	2.8	4.9	3.8	35	206	2.3
LSD at 5%		0.8	0.8	0.9		11	34	0.2
Merion Kentucky Bluegrass							226	2.4

Test mowed at 3/4 inch and maintained at moderate to high fertility at all seasons.

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Table 3. Maturity Ratings of Perennial Ryegrass
Varieties and Selections at New Brunswick,
New Jersey.

Variety	Date at which 50% of plants initiated anthesis 1972	
Citation	May 30	a*
Pennfine	June 1	a
Yorktown	June 6	b
Diplomat	June 10	c
Lofts Syn F	June 15	d
Manhattan	June 17	d

*Dates followed by the same letter do not differ from
each other at the 5 percent probability level.

Table A. Date of Anthesis of Perennial Ryegrass Selections and Cultivars Grown in a Spaced-Plant Nursery at Adelphia, New Jersey during 1974.

<u>Entry</u>	<u>Mean date of anthesis</u>	<u>Standard error of mean</u>
1. Linn	May 23	± 0.77
2. Pennfine	May 25	± 0.64
3. Oregon perennial	May 26	± 0.80
4. Citation	May 27	± 0.71
5. Game	May 27	± 1.01
6. G. Arika	May 28	± 0.83
7. Omega	June 1	± 0.72
8. Yorktown	June 4	± 0.55
9. NK100	June 5	± 0.65
10. Diplomat	June 8	± 0.65
11. Combi	June 10	± 0.99
12. Caprice	June 12	± 0.63
13. Sportiva	June 12	± 0.69
14. Manhattan	June 12	± 0.51
15. Ensporta	June 12	± 0.37
16. Lofts Syn F	June 12	± 0.44
17. Norlea	June 13	± 0.47
18. Pelo	June 13	± 0.63
19. S-23	June 15	± 0.88
20. Compas	June 15	± 0.86
21. Syn G	June 16	± 0.49
22. Servo	June 16	± 0.68
23. NK200	June 16	± 0.48
24. Eton	June 20	± 0.97
25. Splendor	June 20	± 1.17
26. Perma	June 21	± 1.14
27. Lamora	June 22	± 1.16
28. Sprinter	June 28	± 1.07
29. Barenza	June 28	± 1.28
30. Paramount	June 28	± 1.50
31. Endura	June 29	± 1.16
32. Athletic	June 30	± 2.20

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Table B. Plant Height and Length of Spike of Perennial Ryegrass Selections and Cultivars Grown in a Spaced-Plant Nursery at Adelphia, New Jersey during 1974.

Entry	Plant Height (cm)	Length of Spike (cm)
1. Citation	51	18
2. Yorktown	53	21
3. Pennfine	54	19
4. Omega	56	20
5. Ensporta	57	20
6. Diplomat	58	20
7. Manhattan	63	23
8. Sprinter	63	24
9. Linn	63	21
10. Syn F	63	23
11. Oregon perennial	64	20
12. Eton	64	23
13. S-23	67	25
14. NK-100	69	24
15. NK-200	70	24
16. Pelo	72	24
17. Norlea	76	26

Table C. Turf Density Ratings of Perennial Ryegrass Cultivars and Selections Evaluated in Turf Trials at New Brunswick, New Jersey.

Entry	Tillers per 100 sq. cm. November 1973
1. Diplomat	352
2. Lofts Syn F	329
3. Pennfine	322
4. Citation	321
5. Omega	313
6. Yorktown	308
7. Manhattan	288
8. Pelo	251
9. NK-100	220
10. Game	207
11. Splendor	206
12. Oregon perennial	206
13. NK-200	202
14. Sprinter	202
15. Barenza	191
16. Caprice	191
LSD at 5%	34
Merion Kentucky bluegrass	226

Table D. Leaf Width of Perennial Ryegrass Cultivars and Selections Grown in a Spaced Plant Nursery at Adelphia, New Jersey during 1974.

Entry	Width of leaf immediately below flag leaf mm	Standard error of mean
1. Citation	3.4	± 0.09
2. Pennfine	3.5	± 0.07
3. Omega	3.9	± 0.10
4. Diplomat	3.9	± 0.09
5. Oregon Perennial	4.0	± 0.07
6. Linn *	4.0	± 0.08
7. Ensporta	4.4	± 0.09
8. S-23	4.6	± 0.09
9. Yorktown	4.7	± 0.15
10. NK-100	4.7	± 0.13
11. Syn F	4.8	± 0.08
12. Manhattan	5.3	± 0.12
13. Sprinter	5.4	± 0.11
14. NK-200	5.6	± 0.10
15. Pelo	5.7	± 0.11
16. Norlea	6.8	± 0.13
17. Eton	7.0	± 0.11

WHEREAS, C. Reed Funk, Soils and Crops Department, New Jersey 7400056
Agricultural Experiment Station, P. O. Box 231, New Brunswick,
New Jersey has, in cooperation with Lofts Pedigreed Seed, Inc.,
directed the breeding and development of 'Yorktown' perennial
ryegrass, Plant Variety Protection Application No. 7400056.

NOW, THEREFORE, in consideration of one (\$1.00) DOLLAR and other
valuable considerations paid to me by Lofts Pedigreed Seed, Inc.,
Chimney Rock Road, Bound Brook, New Jersey the receipt whereof
is acknowledged, I hereby assign unto the said Lofts Pedigreed
Seed, Inc. the entire interest in Yorktown perennial ryegrass
for the United States and all foreign countries and any plant
variety protection to be issued therefore in the United States
or any foreign country. The Commissioner, Plant Variety Protection
Office is requested to issue the plant variety protection certifi-
cate in accordance herewith.

EXECUTED

May 26, 1976

STATE OF NEW JERSEY

C. Reed Funk

C. Reed Funk

COUNTY OF MIDDLESEX

Before me a Notary Public for said County, personally appeared
C. Reed Funk known to me to be the person who executed the
foregoing instrument and acknowledged it to be his free act
and deed.

WITNESS my hand and seal

May 26, 1976

Aida Bianchi

Notary Public

My commission expires April 3, 1977

FILED

JAN 14 1998

**LONNA R. HOOKS
SECRETARY OF STATE**

**CERTIFICATE OF MERGER OF
LOFTS SEED, INC. INTO
LOFTS MERGERCO, INC.**

To: The Secretary of State
State of New Jersey

Pursuant to the provisions of Section 14A:10-7 Corporations, General, of the New Jersey Statutes, the undersigned corporations hereby execute the following Certificate of Merger.

ARTICLE ONE

The names of the corporations proposing to merge and the states under the laws of which such corporations are organized, are as follows:

Name of Corporation

State of Incorporation

Lofts Seed, Inc.

New Jersey

Lofts Mergerco, Inc.

Nevada

ARTICLE TWO

The laws of the State of Nevada, the state under which such foreign corporation is organized, permit such merger and the applicable provisions of the laws of said jurisdiction have been, or upon compliance with filing and recording requirements will have been, complied with.

ARTICLE THREE

The name of the surviving corporation shall be Lofts Mergerco, Inc. and it shall be governed by the laws of the State of Nevada.

The address of the surviving corporation's registered office is 2700 Sunset Rd., Las Vegas, Nevada 89120 and the name of the registered agent at such address is Johnny Thomas.

ARTICLE FOUR

The following plan of Merger was approved by the shareholders of the undersigned domestic corporation in the manner prescribed by the New Jersey Business Corporation Act, and was approved by the undersigned foreign corporation in the manner prescribed by the laws of the State under which it is organized:

0100731429

FILED
IN THE OFFICE OF THE
SECRETARY OF STATE OF THE
STATE OF NEVADA

JAN 26 1998

26394-92

Shawn Heller
JAN HELLER, SECRETARY OF STATE

CERTIFICATE OF AMENDMENT OF

ARTICLES OF INCORPORATION OF

LOFTS MERGERCO, INC.

Pursuant to the provisions of Nevada Revised Statutes, Title 7, Chapter 78, the undersigned officers do hereby certify:

FIRST: The name of the Corporation is Loftis Mergerco, Inc.

SECOND: The Board of Directors of the Corporation duly adopted the following resolutions on January 10, 1998:

RESOLVED, that it is advisable in the judgment of the Board of Directors of the Corporation that the name of the Corporation be changed, and that, in order to accomplish the same, Article FIRST of the Articles of Incorporation be amended to read as follows:

"FIRST: The name of the corporation (hereinafter called the Corporation) is Loftis Seed Company, Inc."

FURTHER RESOLVED, that a special meeting of the sole stockholder having voting power be and it is hereby called and that notice be given in the manner prescribed by the By-laws of the Corporation and by Nevada Revised Statutes, Title 7, Chapter 78, unless the said stockholder shall waive the notice of meeting in writing or unless the said stockholder shall dispense with the holding of a meeting and shall take action upon the proposed amendment by a consent in writing signed by the sole stockholder, and

FURTHER RESOLVED, that in the event that the said stockholder shall adopt the aforesaid proposed amendment by a vote in favor thereof by at least a majority of the voting power or by a written consent in favor thereof signed by the sole stockholder without a meeting, the Corporation is hereby authorized to make by the hands of its President or a Vice President and by its Secretary or an Assistant Secretary a certificate setting forth the said amendment and to cause the same to be filed pursuant to the provisions of Nevada Revised Statutes, Title 7, Chapter 78.

THIRD: The total number of outstanding shares having voting power of the Corporation is 200, and the total number of votes entitled to be cast by the holder of all of said outstanding shares is 200.

FOURTH: The holder of all of the aforesaid total number of outstanding shares having voting power dispensed with the holding of a meeting of the sole stockholder and adopted the amendment herein certified by a consent in writing signed by the sole stockholder in accordance with the provisions of Nevada Revised Statutes, Title 7, Section 78.320.

January 22, 1998

LOFTS MERGERCO, INC.

By:

Johnny R. Thomas
President

Kathleen L. Gillespie
Assistant Secretary

State of Nevada)
) SS.:
County of Clark)

On January 22, 1998, personally appeared before me, a Notary Public, for the State and County aforesaid, Johnny R. Thomas, as President and Kathleen L. Gillespie, as Assistant Secretary of Loft's Mergerco, Inc., who acknowledged that they executed the above instrument.



NOTARY PUBLIC
STATE OF NEVADA
County of Clark
C.J. WORTH

My Commission Expires April 23rd, 1999

[Signature]
Notary Public

G:\WORK\VALPART\LOFTS\NAMECHNG.LMC

U.S. DEPARTMENT OF AGRICULTURE
Agricultural Marketing Service
Grain Division
Objective Description of Cultivars
RYEGRASS
(Lolium spp.)

1. SPECIES:

- ☒ 1=L. multiflorum (annual or Italian: includes Westerwoldicum)
2=L. perenne (perennial) 3=L. rigidum (includes Wimmera)
4=Hybrid (of species) 5=Other (specify)

2. PLOIDY:

- ☒ 1=Diploid 2=Tetraploid 3= Other (specify)

3. DURATION:

- ☒ 1=Annual or biennial 2=Short lived perennial (3-4 years)
3=Perennial (more than 4 years)

STANDARD CULTIVARS

- 1=Gulf 2=Wimmera 62 3=Linn 4=Pelo
5=Norlea 6=Aberystwyth S-23 7=Manhattan 8=Pennfine

4. MATURITY (50% Headed): (Use standard cultivars from above.)

- ☒ 1=Very early 3=Early 5=Medium 7=Late 9=Very late See Table A
☐ 8 Days earlier than ☒ 7 standard cultivar
☒ 1 0 Days later than ☒ 8 standard cultivar

5. MATURE PLANT HEIGHT: (Use standard cultivars from above.)

- ☐ 5 ☒ 3 cm. High ☐ 1 0 cm. Shorter than ☒ 7 standard cultivar See Table B
☐ cm. Taller than ☐ standard cultivar

6. PERCENT WINTER DAMAGE (estimated as percent of the area appearing dead):
(Use standard cultivars from above.)

- ☐ ☐ 0 Percent damage of application cultivar
☐ ☐ 0 Percent damage of ☒ 7 standard cultivar

7. TURF DENSITY: (Use standard cultivars from above.)

See Table C

- ☒ 3 0 ☒ 8 Tillers per 100 sq. cm.
☐ 1 4 Less tillers per 100 sq. cm. than ☒ 8 standard cultivar
☐ 2 0 More tillers per 100 sq. cm. than ☒ 7 standard cultivar

8. FLAG LEAF (at full growth): (Use standard cultivars from above.)

- ☐ ☐ ☐ cm. Length (from ligule to tip)
☐ ☐ ☐ cm. Shorter than ☐ standard cultivar
☐ ☐ ☐ cm. Longer than ☐ standard cultivar See Table D
☐ ☐ ☐ mm. Width (at widest point)
☐ ☐ ☐ mm. Narrower than ☐ standard cultivar
☐ ☐ ☐ mm. Wider than ☐ standard cultivar
Flag leaf at boot stage: 1=Deflexed 3=Recurved 5=Horizontal
7=Semi-erect 9=Erect

9. LEAVES:


- ☒ 3 Vernation: 1=Leaves rolled in young shoots
2=Leaves semi-rolled (folded with rolled edges)
3=Leaves folded in young shoots
☒ 1 0 0 % Plants with anthocyanin in lower leaf sheath
☒ 2 Foliage color: 1=yellow green 2=medium green 3=blue green

10. SPIKE:

- ☐ ☒ 2 1 mm. Spike length (tip to internode below lowest floret) See Table B
☐ ☒ 2 mm. Shorter than ☒ 7
☐ ☒ 2 mm. Longer than ☒ 8 (Use standard cultivars from above.)

mg. per ten spikes (trimmed to internode below lowest floret)
 mg. lighter per ten spikes than } Use standard cultivars from above.
 mg. heavier per ten spikes than
 Florets per spikelet

Rachis:	<table border="1"><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>										% smooth	<table border="1"><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>										% rough
Spike color:	<table border="1"><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>										% green	<table border="1"><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>										% purple
Lemma:	<table border="1"><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>										% awned	<table border="1"><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>										mm. awn length

	mm. glume length
	1=Spikelet length nearly equal to outer glumes
	2=Spikelet length much longer than outer glumes

		Plants with anthocyanin in coleoptile	
1	2	3	4
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	% Plants with white anthers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	% Plants with yellow anthers
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	% Plants with purple anthers				

1	0	0	% Plants with prostrate growth habit
		0	% Plants with upright growth habit
		0	% Plants with fluorescent roots

14. SEEDS
 [1][6][7][2] mg. per 1,000 seed [4][3][3] mm. total length of 10 seeds [1][1][6] mm. total width of 10 seeds

3	Crown rust (<u>Puccinia coronata</u>)	8	Mildew
8	Leaf spot (<u>Helminthosporium</u>)	0	Red thread (<u>Corticium</u>)
0	Snow mold (<u>Typhula</u>)	5	Brown patch (<u>Rhizoctonia</u>)
0	Dollar spot (<u>Sclerotinia</u>)		Other (specify)

16. INSECT (0=Not tested, 2=Highly susceptible, 4=Moderately susceptible, 6=Moderately resistant, 8=Highly resistant):
 Specify

17. GIVE RESEMBLANCE VALUE IN LEFT COLUMN AND VARIETY IN RIGHT COLUMN FOR VARIETY WITH WHICH COMPARISON IS MADE: (1=Less than, 2=Same as, 3=More erect, more resistant, denser, more persistent, darker or greater height.

<u>Resemblance</u>	<u>Character</u>	<u>Similar variety</u>
2	Plant habit (erectness)	Manhattan
2	Tillering	Manhattan
2	Winter hardiness	Manhattan
2	High temp. stress resistance	Manhattan
2	Turf persistence	Manhattan
3	Plant color	Manhattan
2	Vertical seedling growth rate	Manhattan
2	Crown density	Manhattan
2	Mower shredding resistance	Manhattan

18. GIVE AREA OF ADAPTATION AND INTENDED USE: New Jersey and surrounding area

19. GIVE AREA TEST RESULTS PRESENTED FROM: New Jersey

COMMENTS:

INSTRUCTIONS

GENERAL: Send an original copy of the application, exhibits and \$50.00 fee to U.S. Dept. of Agriculture, Consumer and Marketing Service, Grain Division, Hyattsville, Maryland 20782. Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

5 Insert the date the applicant determined that he had a new variety.

12a First, give the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method. Second, give the details of subsequent stages of selection and multiplication. Third, indicate the type and frequency of variants during reproduction and multiplication and state how these variants may be identified. Fourth, provide evidence on stability.

12b First, give any special characteristics of the seed and of the plant as it passes through the seedling stage, flowering stage and the fruiting stage. Second, describe the mature plant and compare it with a similar commercial variety grown under the same conditions, and indicate the differences.

12c A supplemental form will be furnished by the PVPO to describe in detail a variety for each kind of seed.

12d Provide complete data indicative of novelty. Seed and plant specimens may be submitted and seeds submitted may be sterile. Where possible, include photographs of plant comparisons, chemical tests, etc.

12e Indicate whether applicant is the actual breeder, the employer of the breeder, the owner through purchase or inheritance, etc.

